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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/827,449

04/20/2004

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0756-7293

2793

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08/11/2006

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EXAMINER

STAHL, MICHAEL J

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/827,449

Applicant(s)

TANAKA ET AL.

Examiner

Mike Stahl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 5-16 and 23-48 is/are allowed.  
6) ☒ Claim(s) 1-4, 17, 18, 21 and 22 is/are rejected.  
7) ☒ Claim(s) 19 and 20 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Krause et al. (US 5886313, cited on PTO-892 mailed February 16, 2006).

Claim 1: Krause discloses a beam homogenizer comprising: an optical system for homogenizing energy distribution of a linear-shaped beam spot in one direction, the optical system comprising: first and second cylindrical lenses 16 and 18; and an optical waveguide 17 including a pair of reflection planes provided oppositely, wherein the optical waveguide is provided between the first and second cylindrical lenses; wherein the one direction is a direction of a major axis of the linear shape, and wherein a laser beam is incident into a curved surface of the first cylindrical lens and one edge portion of the optical waveguide and emitted from the other edge portion of the optical waveguide and a curved surface of the second cylindrical lens. See figs. 2, 3, 3A and col. 7 ln. 20 – col. 8 ln. 21.

Claim 2: The optical waveguide 17 is a light pipe (col. 7 lns. 38-43, fig. 2).

Claims 17-18: The Krause apparatus described above with regard to claims 1-2 meets the limitations of claims 17-18. A laser oscillator is provided at 14.

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krause et al. (applied above).

Each of these claims recites a specific range for the aspect ratio for the beam spot (at least 10 or at least 100). Although Krause does not disclose these particular ranges, they are considered arbitrary and not critical to the invention. A person of ordinary skill in the art would have understood that the appropriate aspect ratio depends on the proportions of the object to be illuminated and the processing conditions necessary for that product. Krause is directed to bonding metal sheets by laser heating (see e.g. fig. 1). The desirability of a high aspect ratio beam spot is suggested by the background discussion which indicates that prior art techniques

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were limited to somewhat narrow sheet widths (generally less than 1 meter), whereas the inventive technique enables bonding of sheets 1 meter or wider. Accordingly it would have been obvious to a skilled person to determine a useful aspect ratio for the beam spot in a particular application of the Krause device.

***Response to Arguments*** (May 19, 2006 Response)

The remarks regarding the rejections made in the last Office action mailed February 16, 2006 are persuasive to the extent that some of the independent claims have been amended to include limitations which are not conclusively shown by the previously applied references. Accordingly, the rejections based on those references have been withdrawn.

***Allowable Subject Matter***

Claims 5-16 and 23-48 are allowed. Claims 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of base claim 17.

As to claim 5, Krause does not teach or suggest the recited specific arrangement of the various cylindrical lens surfaces. Claims 6-8 depend from claim 5.

Allowability of claims 9-12 and 23-28 was explained in the action mailed February 16, 2006. The informality objections to claims 9 and 23 were overcome by amendment.

As to claims 13 and 29, Krause does not disclose or suggest using a second optical waveguide which is part of a second optical system for homogenizing the energy distribution of

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the beam spot in a second direction. Claims 14-16 and 30-36 depend from claims 13 and 29 respectively.

As to claims 19-20, Krause does not disclose or suggest using any of the recited types of laser oscillators. Although a YAG laser is mentioned in the background, Krause specifically prescribes the use of laser diodes because of their relative advantages over other laser types.

As to claims 37 and 43, Krause does not teach or suggest the recited semiconductor film irradiation method. There is no suggestion in the reference that the disclosed apparatus could be applied to such a process. Claims 38-42 and 44-48 depend from claims 37 and 43 respectively.

### ***Conclusion***

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Inquiries about this letter should be directed to Mike Stahl at 571-272-2360. Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the technical support staff supervisor at 571-272-1626. Official correspondence which is eligible for submission by facsimile and which pertains to this application may be faxed to 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions about the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Stahl *MJS*  
Patent Examiner  
Art Unit 2874

August 6, 2006

  
Rodney Bovernick  
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